I. AMENDMENTS

IN THE CLAIMS:

Please rewrite the claims as shown below.

B' cont.

1. (Twice Amended) A linear electromagnetic machine comprising:

a movable member;

a stationary member defining at least one stationary pole;

a phase winding positioned such that, when current is flowing in the phase winding, the at least one stationary pole is energized; and

a circuit for energizing the phase winding over a plurality of energization cycles with a unidirectional current of a single polarity, the energizing of the phase winding producing a given force tending to cause linear movement of the movable member with respect to the stationary member, the energizing of the phase winding also producing a normal force tending to cause movement of the movable and stationary members in a direction normal to the desired linear movement;

wherein the normal force profile experienced by the at least one stationary pole over a first energization cycle is different from the normal force profile experienced by the at least one stationary pole over a subsequent energization cycle.

2. The linear electromagnetic machine of claim 1, wherein the movable member defines a plurality of movable poles that pass over the at least one stationary pole as the movable member moves in the desired direction and wherein at least one of the movable poles is different in construction from other of the movable poles.

B' cont.

3. The linear electromagnetic machine of claim 2, wherein the movable poles each define a pole width and wherein at least one of the movable poles has a width that is greater than the width of other of the movable poles.

4. The linear electromagnetic machine of claim 2, wherein the movable poles all have substantially the same width, wherein each movable pole defines an air gap with respect to the stationary pole as it passes over the stationary pole, and wherein the air gap defined by at least one of the movable poles is different from the air gap defined by other of the movable poles.

5. The linear electromagnetic machine of claim 1, wherein the circuit for energizing the phase winding provides an energization current to the phase winding over a first energization cycle that is different from the energization current provided to the phase winding over a second energization.

B' cont.

6. An electromagnetic machine comprising:

a rotor defining a plurality of rotor poles, each rotor pole having a pole face defining an angular width, wherein the angular width of the rotor pole with the widest width is:

(a) substantially equal to or greater than the angular width of the rotor pole with the narrowest width, and

(b) less than 1.5 times the angular width of the rotor pole with the narrowest width;

a stator defining at least two stator poles that are radially opposed to one another;

a phase winding positioned such that, when current is flowing in the phase winding, the at least two stator poles are energized; and

a circuit for energizing the phase winding over a plurality of energization cycles to produce a given desired output on the rotor, the energizing of the phase winding also producing a normal force tending to cause movement of the at least two stator poles towards the rotor;

wherein the normal force profile experienced by the at least two stator poles over a first energization cycle is different from the normal force profile experienced by the at least two stator poles over a subsequent energization cycle.

7. (Once Amended) The electromagnetic machine of claim 6, wherein the rotor defines a plurality of pairs of opposing rotor poles and wherein:

a) during the first energization cycle, a first pair of opposing rotor poles is brought towards alignment with the at least two stator poles;

b) over the second energization cycle, a second pair of opposing rotor poles is brought towards alignment with the at least two stator poles; and

c) the construction of the poles forming the first pair of opposing rotor poles is different from the construction of the poles forming the second pair of opposing rotor poles.

B1 cont.

8. The electromagnetic machine of claim 7, wherein the angular width of the rotor poles forming the first pair of opposing rotor poles is substantially the same as the angular width of the rotor poles forming the second pair of opposing rotor poles.

9. The electromagnetic machine of claim 8, wherein a maximum air gap established between the first pair of opposing rotor poles and the at least two stator poles is different from the maximum air gap established between the second pair of opposing rotor poles and the at least two stator poles.

10. The electromagnetic machine of claim 9, wherein maximum air gap established between the first pair of opposing rotor poles and the at least two stator poles is defined by a notch in the profile of the face of the rotor pole.

11. The electromagnetic machine of claim 6, wherein the circuit for energizing the phase winding provides an energization current to the phase winding over a first energization cycle that is different from the energization current provided to the phase winding over a second energization cycle.

12. The electromagnetic machine of claim 11, wherein the angular width of each of the rotor poles is substantially the same.

13. The electromagnetic machine of claim 6, wherein the rotor includes a plurality of permanent magnets.

B1 cont.

14. An electromagnetic machine comprising:

a rotor defining a plurality of rotor poles, each rotor pole having a pole face defining an angular width, wherein the angular widths of each of the rotor poles are substantially the same;

a stator defining a first set of opposing stator poles and a second set of opposing stator poles, each of the stator poles being associated with at least one current carrying member such that a stator pole is energized when current is flowing through a current carrying member associated with the stator pole; and

a circuit for energizing the at least one current carrying member over a given interval so as to simultaneously energize the first and second sets of opposing stator poles; the energizing of the current carrying member also producing normal forces tending to cause movement of the energized stator poles towards the rotor;

wherein the normal force profile experienced by the first pair of opposing stator poles over the given interval is substantially different from the normal force profile experienced by the second pair of opposing stator poles over the given interval.

15. The electromagnetic machine of claim 14, wherein the construction of the stator poles comprising the first set of opposing stator poles is different from the construction of the stator poles comprising the second set of opposing stator poles.

16. The electromagnetic machine of claim 15, wherein each of the stator poles in the first set of opposing stator poles defines a notched surface.

17. The electromagnetic machine of claim 16, wherein the construction of each of the rotor poles is substantially the same.

Bi cancld.

18. (Once Amended) The electromagnetic machine of claim 14, wherein the construction of the stator poles comprising the first set of opposing stator poles is substantially the same as the construction of the stator poles comprising the second set of opposing stator poles and wherein:

a) during the given interval, a first pair of opposing rotor poles is brought towards alignment with the first set of opposing stator poles;

b) during the given interval, a second pair of opposing rotor poles is brought towards alignment with the second set of opposing stator poles; and

c) the construction of the poles forming the first pair of opposing rotor poles is different from the construction of the poles forming the second pair of opposing rotor poles.

19. The electromagnetic machine of claim 14, wherein a first current carrying member is associated with the first set of opposing stator poles and a second current carrying member is associated with the second set of opposing stator poles, and wherein the circuit for energizing the at least one current carrying member provides an energization current to the first current carrying member that is different from the energization current provided to the second current carrying member over the given interval.